MMHCC
the Mouse Models
of Human Cancers Consortium

MMHCC Newsletter May 2006

MouseLine

New NIH Resources for Knock-Out Mice

by Cheryl Marks, Ph.D.

The NCI joined with other NIH Institutes to support the development of a comprehensive, public resource comprised of mice that have a null mutation in every gene in the mouse genome. The NIH-supported Knock-Out Mouse Project (KOMP) is complementary to, and coordinate with, similar international efforts that are underway. Information about the KOMP is at: http://www.nih.gov/science/models/mouse/.

To initiate the KOMP effort, the NIH assembled a list of existing null mutant strains that have been published, and compared that list with the knock-out strains that are available in public repositories. About 3,200 of the estimated 25,000 genes in the mouse have been knocked-out and the information published; however, only about 750 of these strains are in repositories. NIH efforts are underway to encourage the scientific community to donate the published strains to public repositories to begin the KOMP resource. The NIH advertised in the NIH Guide in March 2006 (http://grants.nih.gov/grants/guide/notice-files/NOT-DA-06-009.html) a Notice to request the help of the scientific community in setting priorities for strains of greatest interest among the published 3,200 null animals. Although the deadline for this Notice expired, the document provides information about how to request the list of 3,200 null strains. The NIH will advertise again in the near future about another opportunity to nominate strains for "repatriation".

The NIH received and reviewed applications to the recent Requests for Applications (RFA) to generate the null mutants that are not already derived to ensure production of a complete collection. Successful applicants will be funded before September 30, 2006. The NIH will also establish a new Data Coordination Center to manage the information about the collection and make the results of the production effort available to the research community.

In addition to the KOMP, the NIH contracted with Deltagen, Inc. of San Carlos, CA, and with Lexicon Genetics, Inc. of The Woodlands, TX to provide NIH and the scientific community with 251 lines of knock-out mice and the information about their extensive phenotyping. These contracts also provide the NIH with the option to obtain up to 1500 additional mouse lines and phenotypic data over the next three years, depending upon the availability of funds. With each mouse line, the contractors supply detailed, objective data on the impact of the specific gene deletion on the mouse's phenotype, including appearance, health, fitness, behavior, ability to reproduce, and radiological and microscopic data. The new contracts provide NIH with irrevocable, perpetual, worldwide, royalty-free licenses to use and distribute to academic and non-profit researchers these lines of knockout mice.

New NIH Resources for Knock-Out Mice cont.

The mouse lines are stored as cryo-preserved embryos, sperm, and ES cells from NIH-funded mouse repositories that supply mice to universities, medical schools, and research labs world-wide. All data on the mice is available to researchers without restriction. Under the license agreements with Deltagen and Lexicon, researchers who receive the knockout mice lines through NIH are free to publish any results from research involving the line and also to seek patent or other intellectual property protection for any of the inventions or discoveries resulting from such research. For more information on the Deltagen and Lexicon knockout mice and their accompanying data, go to:
http://www.nih.gov/science/models/mouse/deltagenlexicon/list.html.

Meetings

May 18 - 19, 2006
The Laboratory Mouse in Translational Cancer Research and Discovery
New York City, NY
Meeting information: http://www.jax.org/courses/events/coursedetails.do?id=339

June 2 - 6, 2006
42nd ASCO Annual Meeting
Atlanta, Georgia
Meeting information: http://www.asco.org

June 18 – 21, 2006
Beatson International Cancer Conference - "24 Years of Ras and Human Cancer"
Glasgow, Scotland
Meeting information: http://www.beatson.gla.ac.uk/conf

June 27, 2006
Symposium: "Mouse Models of Cancer and Aging"
Seattle, Washington
Meeting information: http://www.pathology.washington.edu/research/bioage/mousemodels/

October 25 - 28, 2006
AACR Special Conference: Mouse Models of Cancer
Cambridge, Massachusetts
Meeting information: http://www.aacr.org/page5809.aspx

Funding Opportunities

Basic Research in the Bladder and Lower Urinary Tract (R01)
PA-06-254
NIDDK, NCI, NIA, and Office of Research on Women's Health
http://grants.nih.gov/grants/guide/pa-files/PA-06-254.html

Pancreatic Development and Regeneration: Toward Cellular Therapies for Diabetes (R01 and R21)
PA-06-271 and PA-06-272
NIDDK
http://grants.nih.gov/grants/guide/pa-files/PA-06-271.html
http://grants.nih.gov/grants/guide/pa-files/PA-06-272.html

In Utero Exposure to Bioactive Food Components and Mammary Cancer Risk (R21)
PA-06-277
NCI, NIEHS, Office of Dietary Supplements
http://grants.nih.gov/grants/guide/pa-files/PA-06-277.html

Neurotechnology Research, Development, and Enhancement (R21 and R01)
PA-06-278 and PA-06-0279
Multiple Institutes
http://grants.nih.gov/grants/guide/pa-files/PA-06-278.html
http://grants.nih.gov/grants/guide/pa-files/PA-06-279.html

Grants for Alzheimer's Disease Drug Discovery (R21)
PAS-06-261
NIA, Institute for the Study of Aging, NIMH, NINDS
http://grants.nih.gov/grants/guide/pa-files/PAS-06-261.html

Diet-Induced Changes in Inflammation as Determinants of Colon Cancer (R21)
PA-06-283
National Cancer Institute
http://grants.nih.gov/grants/guide/pa-files/PA-06-283.html

Immunoregulation of Gastrointestinal Carcinogenesis (R01 and R21)
PA-06-289 and PA-06-290
National Cancer Institute
http://grants.nih.gov/grants/guide/pa-files/PA-06-289.html
http://grants.nih.gov/grants/guide/pa-files/PA-06-290.html

Funding Opportunities cont.

Etiology, Prevention, and Treatment of Hepatocellular Carcinoma (R21)
PA-06-295
NCI, NIAA, NIDDK
http://grants.nih.gov/grants/guide/pa-files/PA-06-295.html

Pilot Studies in Pancreatic Cancer (R03)
PA-06-314
National Cancer Institute
http://grants.nih.gov/grants/guide/pa-files/PA-06-314.html

Cross-Disciplinary Translational Research At NIH (R21 and R03)
PA-06-321 and PA-06-322
NIDA, NCI
http://grants.nih.gov/grants/guide/pa-files/PA-06-321.html
http://grants.nih.gov/grants/guide/pa-files/PA-06-322.html

Research on Malignancies in AIDS and Acquired Immune Suppression (R21)
PA-06-338
NCI, NIDCR
http://grants.nih.gov/grants/guide/pa-files/PA-06-338.html

Memory T Lymphocytes in Cancer Immunology (R21 and R01)
PA-06-349 and PA-06-350
National Cancer Institute
http://grants.nih.gov/grants/guide/pa-files/PA-06-349.html
http://grants.nih.gov/grants/guide/pa-files/PA-06-350.html

Testing Tobacco Products Promoted to Reduce Harm (R21)
PA-06-361
National Cancer Institute
National Institute on Drug Abuse
http://grants.nih.gov/grants/guide/pa-files/PA-06-361.html

Exfoliated Cells, Bioactive Food Components, and Cancer (R21 and R03)
PA-06-359 and PA-06-360
National Cancer Institute
http://grants.nih.gov/grants/guide/pa-files/PA-06-359.html
http://grants.nih.gov/grants/guide/pa-files/PA-06-360.html

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Repository News

The MMHCC Mouse Repository is an NCI-supported resource for the distribution of mouse cancer models and associated strains. The Repository makes strains available to all members of the scientific community. Up to 3 breeder pairs of each available strain may be ordered.

Newly accepted strains
The following strain has recently been accepted into the MMHCC Repository and will soon be available for distribution (*please click on the specific link, below, for additional information*):

1. FVB.Cg-Tg(KRT14-HPV16)wt1Dh
   http://mouse.ncifcrf.gov/details.asp?ID=01XT3

More information can be found on the Mouse Repository's website: http://mouse.ncifcrf.gov

Repository News – Last Call

The following strains will be maintained as live colonies until the end of **June 2006**. After this date, they will be supplied as cryopreserved embryos. If you foresee using one of these strains in the near future, order now! Please be aware that all necessary paperwork (order form, MTA, etc.) needs to be completed and received by the Repository before the end of June 2006 in order to receive live mice.

1. C57BL/6N-Tg(Igl-MYC)3Hm
   http://mouse.ncifcrf.gov/available_details.asp?ID=01XA7
2. FVB/N-Tg(TetO-Cre)3Jig
   http://mouse.ncifcrf.gov/available_details.asp?ID=01XE1
3. B6.129S-*Kras2* ^{tm3Tyj}
   http://mouse.ncifcrf.gov/available_details.asp?ID=01BM3